

REMARKS

DRAWINGS

FIGS. 1-4 have been amended as reflected in the accompanying Letter to the Chief Draftsman. In FIG. 1, reference label 24 is now redirected to the lower region of the elbow. The horizontal coax run connected to elbow 24 is now labeled 28, with the horizontal coax run 26 that is connected to elbow 22 further extended behind and beyond run 28 to the left and again labeled 26. Also in FIG. 1, the reference label near lower center of the figure is revised from "36" to 38. FIG. 1 is further clarified through representation of joints between sections of coax as flanges rather than simple breaks.

FIG. 2 is modified through addition of a reference label 34 for the cross bar also so labeled in FIG. 1, and in clarification of flange face views and frame 30 side views through identification of hidden and center lines by distinctive line type. FIG. 2 is further clarified through positioning of flanges to agree with FIG. 1.

FIGS. 3 and 4 have been further clarified through positioning of flanges to agree with FIG. 1 and through repetition of reference labels 32 and 36 from FIG. 1.

Other minor amendments have been made to improve the form of illustration.

The cancellation of Claim 9 without prejudice renders the objection to the drawings under 37 CFR §1.83(a) moot.

Reconsideration and withdrawal of the objections to the drawings is respectfully requested.

SPECIFICATION

The specification has been amended to correct obvious typographical errors and in response to the Examiner's comments. These amendments are merely formal in nature and not material to patentability. Reconsideration and withdrawal of the objections to the specification is respectfully requested.

STATUS OF THE CLAIMS

Claims 1-22 are pending. Claim 9 has been canceled without prejudice or disclaimer of the subject matter. Applicants reserve the right to pursue the subject matter of this claim in this or another application. Claims 1-8, 11-15, 17, 18, and 20-22 have been amended for clarity and to resolve 37 U.S.C. §112 ¶2 objections, not for reasons substantially related to patentability.

Accordingly, no new matter has been added by these amendments and no estoppels are intended thereby.

Reconsideration and withdrawal of the outstanding rejections is respectfully requested in view of the foregoing amendments and the following remarks.

OFFICE ACTION

REJECTIONS UNDER 35 U.S.C. §112, SECOND PARAGRAPH

In response to the indefiniteness rejections, Claims 7, 8, 17, 18 have been amended. Claim 7 has been amended to delete "flexible section" and to recite —expandable element — in two places, as well as to clarify that "the coaxial line" recited is —the first coaxial line—. Claim 8 has been amended to recite —a multiplicity of spring hangers, each of which provides some of the suspension of one of the pair of coaxial lines from the tower at one of a multiplicity of

locations—. Claim 17 has been amended to recite —the first one of the pair of coaxial lines— in four instances. Claim 18 has been amended to recite —suspension means for distributed weight-bearing of the elements comprising the pair of coaxial lines— and —suspension from a multiplicity of locations along the vertical dimension of the tower— as well as to recite the movement of —individual— coaxial lines and —each of the pair of coaxial lines—.

Accordingly, it is respectfully requested that the §112¶2 rejections be withdrawn.

OBJECTIONS

In Claims 1-6, 11-16, and 20-22, references to “coaxial lines” have been amended to recite a —pair of coaxial lines—. These claims have been further amended as required to refer consistently to —a first coaxial line— or the equivalent in all instances where reference is made to the line that includes a flexible or expandable section.

In Claims 2, 12, and 22, references to one or both elbows have been clarified.

In claims that refer to “tying”, the wording has been revised where appropriate.

In all claims, specifically including Claim 16, references to “each” have been amended as suggested.

In Claim 20, “power” has been corrected to —tower—.

The wording of Claims 20 and 21 has also been amended to improve their form.

REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 1-4, 7, 8, 11-14, and 17-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Bernard, Jr. et al.* Applicants respectfully traverse this rejection.

Without conceding the propriety of the rejections, it is noted that Claim 1 recites, in part, an expandable element disposed in-line along the first line of a pair of coaxial lines. Claim 1 also recites, in part, a frame rigidly tying together the pair of lines below the expandable element of the first line. In Bernard, Jr., springs 27 are weight carriers (column 4, lines 41-42) hooked to clamp 37 pieces held fast upon the casing 23 by bands or straps 14 (column 4, lines 7-12). Thus Bernard, Jr. fails to teach or suggest an expandable in-line element of a coaxial line. Bernard, Jr. further fails to teach or suggest a frame that ties a pair of coaxial lines together rigidly below the expandable element.

In accordance with the M.P.E.P. §2143.03, to establish a prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re: Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re: Wilson, 424 F.2d 1382, 1385, 165 USPQ 494 196 (CCPA 1970).

Thus, it cannot be said that Bernard, Jr. teaches or suggests the present invention as claimed.

Without conceding the propriety of the rejections, it is noted that Claim 11 recites, in part, a pair of coaxial lines with an upper portion of each coaxial line suspended from the tower while a lower end is free to move vertically relative to the tower. Claim 11 also recites, in part, expansion means disposed in-line along one line and tying means rigidly tying the lines together below the expansion means. Bernard, Jr. fails to teach or suggest expansion means, as well as tying means that locks a pair of coaxial lines together rigidly below the expansion means. Bernard, Jr. further fails to teach or suggest a lower end of a coaxial line with in-line expansion means rigidly tied by tying means to a second coaxial line.

In accordance with the M.P.E.P. §2143.03, to establish a prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re: Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re: Wilson, 424 F.2d 1382, 1385, 165 USPQ 494 196 (CCPA 1970).

Thus, it cannot be said that Bernard teaches or suggests the present invention as claimed.

Without conceding the propriety of the rejections, it is noted that Claim 20 recites, in part, a pair of coaxial lines with an upper portion of each coaxial line suspended from the tower while a lower end is free to move vertically relative to the tower. Claim 20 also recites, in part, the steps of providing an expandable element in-line along one line and of holding the lower ends of the coaxial lines together below the expandable element. Bernard, Jr. fails to teach or suggest a step of providing such an expandable element, as well as a step of providing a frame that locks a pair of coaxial lines together rigidly below the expandable element. Bernard, Jr. further fails to teach or suggest providing a lower end of a coaxial line with an expandable element and further does not hold it rigidly to a second coaxial line at a relative horizontal height on a shared tower.

In accordance with the M.P.E.P. §2143.03, to establish a prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re: Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re: Wilson, 424 F.2d 1382, 1385, 165 USPQ 494 196 (CCPA 1970).

Thus, it cannot be said that Bernard teaches or suggests the present invention as claimed.

Claims 3, 5, and 7 recite, in part, retaining the bottom of the coaxial lines in a common horizontal plane and using a frame to inhibit axial misalignment. These claims further recite, in part, a cross member strapped to the lines. Bernard, Jr. fails to teach or suggest retaining the bottom of the coaxial lines in a common horizontal plane and using a frame to inhibit axial misalignment. Bernard, Jr. further fails to teach or suggest a cross member strapped to the lines.

In accordance with the M.P.E.P. §2143.03, to establish a prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re: Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re: Wilson, 424 F.2d 1382, 1385, 165 USPQ 494 196 (CCPA 1970).

Thus, it cannot be said that Bernard teaches or suggests the present invention as claimed.

Claims 13, 15, 17, and 19 recite means for retaining the bottom of the coaxial lines in a common horizontal plane and using a frame to inhibit axial misalignment. These claims further recite means for strapping a cross member to the lines. Bernard, Jr. fails to teach or suggest means for retaining the bottom of the coaxial lines in a common horizontal plane and using a frame to inhibit axial misalignment. Bernard, Jr. further fails to teach or suggest means for strapping a cross member to the lines.

In accordance with the M.P.E.P. §2143.03, to establish a prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re: Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re: Wilson, 424 F.2d 1382, 1385, 165 USPQ 494 196 (CCPA 1970).

Thus, it cannot be said that Bernard teaches or suggests the present invention as claimed.

Claim 21 recites the step of holding the lower ends of the lines at the same height while allowing them to move vertically relative to the tower. Bernard, Jr. fails to teach or suggest the step of holding the lower ends of the lines at the same height while allowing them to move vertically relative to the tower.

In accordance with the M.P.E.P. §2143.03, to establish a prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re: Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re: Wilson, 424 F.2d 1382, 1385, 165 USPQ 494 196 (CCPA 1970).

Thus, it cannot be said that Bernard teaches or suggests the present invention as claimed.

Applicants respectfully request reconsideration and withdrawal of the rejection to Claims 1-4, 7, 8, 11-14, and 17-22 on this basis.

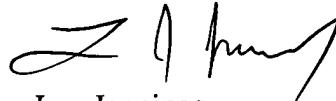
CONCLUSION

In light of the above remarks, Applicants respectfully submit that all pending claims 1-4, 7, 8, 11-14, 17-19, and 20-22, as currently presented, are in condition for allowance. If, for any reason, the Examiner disagrees, the Examiner is invited to telephone the undersigned attorney at 202-861-1696 in an effort to resolve any matter still outstanding before issuing another action.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time. Please charge any fee deficiencies or credit any overpayments to Deposit Account No. 50-2036 referencing attorney docket number 87326.1940.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE SPECIFICATION:

Paragraph beginning on Page 8 at Line 16:

A frame 30 connects and ties together the vertical portions of the elbows [26] 22 and [28] 24 so that they remain horizontal to each other. Thus, although the frame 30 may move vertically relative to the tower, the two elbows [26] 22 and [28] 24 will travel together, and will always be at the same height or horizontal plane as each other. A flexible section or expandable element 32, which can expand and contract axially, is provided between the upper fixed end of one coaxial line 14 and its corresponding elbow [26] 22.

Paragraph beginning on Page 9 at Line 3:

The length from the top of both coaxial lines 14 and 16, including the flexible section 32, to their respective elbows [20] 22 and [22] 24, is made electrically and mechanically the same length for a given set of ambient conditions. Differences between the expansion of the coaxial lines, such as placement of the sunlight during operation that causes one coaxial line to grow at a different rate than the adjacent coaxial line, is compensated for by compression or expansion of the flexible section.

Paragraph beginning on Page 9 at Line 17:

In a preferred embodiment, the flexible section is manufactured from stainless steel and plated with high conductivity silver, and has a corrugated sidewall profile. The inner conductor

33, shown in FIG. 2, either is manufactured from [either] stainless steel and plated with high conductivity silver and has a corrugated sidewall profile or utilizes a rigid copper tubing telescoping in another rigid copper tubing with a sliding contact to allow expansion and contraction in the axial direction.

Paragraph beginning on Page 10 at Line 3:

[The] Referring to FIG. 1, the frame 30 in a preferred embodiment comprises a cross bar portion 34 that is strapped to the upper portions of the elbows 22 and 24 by straps 36. This may be seen from the side in FIG. 3. In this way, the elbows 22 and 24 are tied together so that they cannot move vertically relative to each other, and hence the total effective length from the elbows to the top of the coaxial lines 14 and 16 remains [constant] equal. If a relative differential expansion is occurring between the segments along the length of coaxial lines 14 and 16, the difference in expansion will be taken up by expansion or contraction of the flexible section 32.

Paragraph beginning on Page 10 at Line 11:

[The] Referring to FIG. 1 and FIG. 2, the frame 30 may also include a stabilization leg assembly 38 which extends upward from the frame 30 along the flexible section, without contacting the flexible section, and which has a sliding contact with the circumference of the segment of the coaxial line 14 located immediately above the flexible section 32. By virtue of this design, the leg stabilization assembly 38 permits the frame to restrict relative lateral, [or] i.e., sideways motion at the flexible section, so that the flexible section provides for only vertical expansion or contraction. In this way, the coaxial line [13] 14 and its elbow [26] 22 remain in

axial alignment. Alternate views of the configuration from both sides are presented in FIG. 3 and FIG. 4.

IN THE DRAWINGS:

Please refer to amended FIGS. 1-4 as reflected in the letter to the Chief Draftsman dated February 21, 2003, a copy of which is attached hereto.

IN THE CLAIMS:

Please cancel claim 9.

Please amend claims 1-4; 7, 8; 11-14, 17-19; 20-22 as follows. A marked up copy of the claims as amended is submitted herewith in the Appendix.

1. (Amended) An apparatus for stabilizing a pair of parallel coaxial lines within a tower, with an upper portion of each coaxial line being suspended from the tower, and a lower end of [the] each coaxial line[s] free to move vertically relative to the tower, the apparatus comprising:

an expandable element disposed in-line ^{part of} ~~along~~ a first portion of ~~the~~ ^{as} first one of the pair of coaxial lines; and

a frame rigidly tying together the [two] pair of coaxial lines at a second portion of each one of the pair of coaxial lines below the expandable element of the first one of the pair of coaxial lines.

2. The apparatus according to claim 1, wherein the second portions of the pair of coaxial lines tied together each comprise an elbow.

3. The apparatus according to claim 1, wherein the frame ties together the second portions of the pair of coaxial lines so that they are retained in a common horizontal plane.

4. The apparatus according to claim 2, wherein the frame ties together the elbows of the pair of coaxial lines so that they are retained in a common horizontal plane.

5. An apparatus according to claim 1, wherein the frame includes a cross member that is strapped to each of the second portions of the pair of coaxial lines.

6. An apparatus according to claim 2, wherein the frame includes a cross member that is strapped to each of the elbows of the pair of coaxial lines.

7. An apparatus according to claim 1, wherein the frame further includes a stabilization assembly that surrounds the first coaxial line at a position above the [flexible section] expandable element thereof and permits vertical travel of the first coaxial line relative to the frame at the surrounded position, [and inhibits] while inhibiting lateral movement of the first coaxial line at that position relative to the frame, thereby permitting the expandable element to expand and contract vertically[, and] while inhibiting axial misalignment of the line above and below the [flexible section] expandable element of the first coaxial line.

8. An apparatus according to claim 1, further comprising a multiplicity of spring hangers, each [supporting] one of which provides some of the suspension of one of the pair of

coaxial lines from the tower at one of a multiplicity of locations along the vertical extent of the tower, [wherein the] whereby said spring hangers permit vertical travel of the coaxial line relative to the tower, and inhibit lateral movement of the coaxial line relative to the tower.

11. An apparatus for stabilizing a pair of parallel coaxial lines for an antenna having a tower, with [an upper] a topmost portion of each of the pair of coaxial lines being [suspended from] fixed to the tower, and a lower end of each of the pair of coaxial lines free to move vertically relative to the tower, the apparatus comprising:

expansion means disposed in-line ^{as part of} [along] a first portion of the first one of the pair of coaxial lines; and

tying means for rigidly tying together the [two] pair of coaxial lines at a second portion of each of the pair of lines below the expansion means.

12. The apparatus according to claim 11, wherein the second portions of the pair of coaxial lines tied together each comprise an elbow.

13. The apparatus according to claim 11, wherein the tying means ties together the second portions of the pair of coaxial lines so that they are retained in a common horizontal plane.

15. An apparatus according to claim 11, [where in] wherein the tying means include a cross member that is strapped to each of the second portions of the pair of coaxial lines.

16. An apparatus according to claim 12, wherein the tying means includes a cross member that is strapped to each of the second portions of the respective elbows of the pair of coaxial lines.

17. An apparatus according to claim 11, wherein the tying means further includes a stabilization assembly that surrounds the first one of the pair of coaxial lines at a position above the expansion means and permits vertical travel of the first one of the pair of coaxial lines relative to the tying means at the surrounded position, but inhibits lateral movement of the first one of the pair of coaxial lines at that position relative to the tying means, thereby permitting the expansion means to expand and contract vertically, while inhibiting axial misalignment of the first one of the pair of coaxial lines above and below the expansion means.

18. An apparatus according to claim 11, further comprising [spring hangers each supporting one coaxial line] suspension means for distributed weight-bearing of the elements comprising the pair of coaxial lines from the tower, [wherein] whereby the [spring hangers] suspension from a multiplicity of locations along the vertical dimensions of the tower permits vertical travel of the individual coaxial lines relative to the tower, but inhibits lateral movement of each of the pair of coaxial lines relative to the tower.

20. A method for stabilizing a pair of parallel coaxial lines for an antenna having a tower, with an upper portion of each of a pair of coaxial lines being fixedly suspended from the tower, and a lower end of each of the pair of coaxial lines free to move vertically relative to the [power] tower, the method comprising the steps of:

providing an expandable element in-line at a location between the upper portion and the lower end of the first of the pair of coaxial lines; and

holding the lower ends of the pair of pair of coaxial lines together at a relative horizontal height with each other.)

21. A method according to claim 20, further comprising the steps of permitting the lower ends of the pair of coaxial lines to move vertically relative to the tower, while simultaneously holding the lower ends of the pair of coaxial lines at the same height as each other.

22. A method according to claim 20, wherein the portions of the pair of coaxial lines tied together each comprise an elbow.